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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/594,324	06/15/2000	Toshio Matsumura		8859

7590 03/18/2005

Wood Phillips VanSanten  
Clark & Mortimer  
500 W Madison Street Suite 3800  
Chicago, IL 60661

EXAMINER	
CINTINS, IVARS C	
ART UNIT	PAPER NUMBER
1724	

DATE MAILED: 03/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/594,324	Applicant(s) MATSUMURA ET AL.	
	Examiner Ivars C. Cintins	Art Unit 1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2005.  
2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3-11 and 14-31 is/are pending in the application.  
4a) Of the above claim(s) 25-31 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1,3-11 and 14-24 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☒ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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Art Unit: 1724

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 3-11 and 14-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. The term "formed by setting" (claim 1, line 3) is somewhat indefinite as to the apparatus limitation intended. Applicant is advised that an amendment changing "formed by setting" to --- comprising --- in line 3 of claim 1 would overcome this portion of the rejection. Also, the terms "from the inlet from externally" (claim 8, line 3) and "conventional" (claims 17 and 20, line 2) are vague, and indefinite as to the limitations intended. Claims 3-7, 9-11, 14-16, 18, 19 and 21-24 depend from an indefinite claim, and are therefore themselves indefinite.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5, 21, 22 and 24 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (U.S. Patent No. 5,882,517) in view of VanderBilt et al. (U.S. Patent No. 4,753,728). As pointed out in the previous Office action, Chen et al. discloses a porous structure (filter) for separating unwanted constituents from a fluid (see col. 1, lines 4-9), which structure comprises activated carbon (col. 9, lines 48-49; and col. 16, line 31) in combination with a polymeric binder of the type recited (col. 6, lines 21-23; and col. 18, line 3). Accordingly, this reference discloses the claimed invention with the exception of the recited inlet

Art Unit: 1724

and outlet for the filter, the exact melt index of the binder, and the exact density of this porous structure. However, since the porous structure of the reference is intended to be used as a filtration material, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide this reference material with a housing having an inlet and an outlet, in order to facilitate contact between this filtration material and the fluid undergoing treatment. Also, VanderBilt et al. discloses that carbon block filters formed with very low melt index polymer binders (see col. 3, lines 30-37) will permit high flow rates, such as .8 and 1.0 gallons per minute (3.6 and 4.5 L/min, respectively). See TABLE II, examples 21 and 22. Since Chen et al. clearly discloses a melt index range which encompasses all of Applicant's recited values (col. 6, lines 19-23), it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ polymer binders with a melt index at the lower end of this disclosed range (i.e. between 1.1 and 2.3 g/10 min) to form the reference filter, if one wanted to maximize the flow rate through this filter. Furthermore, it would have been obvious of one of ordinary skill in the fluid purification art to employ a filter having the recited density in the system of the modified primary reference, since such a density would correspond to a porous structure called for by this modified primary reference. Moreover, Chen et al. clearly teaches utilizing carbon particles having a size of 10 microns (see col. 5, line 8), and these 10 micron particles are inherently capable of passing through "a mesh of 60-100," and also through "a mesh of larger than 100," as required by claim 1.

Claims 1, 3-11 and 14-24 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Unexamined Patent Application Publication No. 10-85729 in view of Chen et al., further in view of VanderBilt et al. As pointed out in the previous Office action, the primary

Art Unit: 1724

reference discloses a filter cartridge comprising a chamber filled with activated carbon, and a hollow yarn membrane chamber. Accordingly, this primary reference discloses the claimed invention with the exception of the recited polymeric binder. Chen et al., as modified by VanderBilt et al. above, discloses a porous filter element of the type recited; and it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the filter element of the secondary references for the activated carbon of the primary reference, in order to obtain the advantages disclosed by these secondary reference for the system of the primary reference. As explained above, claim 1 does not preclude the use of a single carbon particulate material having a size such that it will pass through a mesh of larger than 100.

Applicant's arguments filed January 27, 2005 have been noted and carefully considered but are not deemed to be persuasive of patentability. Applicant argues that particles that pass through a sieve of 60-100 mesh exclude particles which are capable of passing through a sieve of greater than 100 mesh. However, other than the unidentified figure presented on page 10 of the above noted response, Applicant has not presented any evidence (e.g. textbooks, industry publications, etc.) that supports the argument that the term "60-100 mesh" requires particles that are retained by a 100 mesh screen. As can be seen by Applicant's own figure, the particles at the bottom of the vessel shown in this figure are capable of passing through both the 60-100 mesh screen and the greater than 100 mesh screen. Accordingly, the 10 micron size carbon particles of Chen et al. are deemed to satisfy the limitations recited in lines 10-13 of claim 1.

Applicant is advised that claims 1, 3-11 and 14-24 would be allowed if it can be demonstrated that the language of claim 1 requires activated carbon with two different particle

Art Unit: 1724

sizes, a first particle size which passes through a 60 mesh sieve but is retained by a 100 mesh sieve, and a second particle size which passes through a 100 mesh sieve.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to I. Cintins whose telephone number is (571) 272-1155. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Duane Smith, can be reached at (571) 272-1166.

The centralized facsimile number for the USPTO is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**Ivars C. Cintins**  
**Primary Examiner**  
**Art Unit 1724**

I. Cintins  
March 16, 2005